

ARM Manus Research Station

Site Visit 0610M Report

Visit Duration: 11 October to 26 October 2006

Manus Island, Papua New Guinea

# SV-0610M Final Report

<b>Site: Manus</b>	<b>Dates on Site: 11-26 October 2006</b>
<b>Team Members:</b> Troy Culgan John Glowacki	<b>Required Items &amp; Other Actions:</b> <ul style="list-style-type: none"> <li>• Cal kit</li> <li>• RAID collector w/ 2 RHE OS HDs</li> <li>• Metpack for GPS Suominet</li> <li>• TSI mirror</li> <li>• 2 DS RHE OS HDs, ref. BCR 01142</li> <li>• 6 NFS Storage Array HDs</li> </ul>
<b>Tasks Summary:</b> MMCR repair Annual calibration Routine maintenance	<b>Safety:</b> <u>Major Hazards:</u> Caustic chemicals (KOH), Explosive gas (H2), AC electricity <u>Hazard Controls:</u> BOM Electrolyser Handbook, BM Electrolyser Operations/Maintenance Training, ASNZS 4836/2001-Safe Working on LV Electrical Installations, 2-man rule  When replacing items (e.g., desiccant, filters, etc.), record and report the quantity of spares left on site.

## SITE TASKS

High priority / usually non-routine		Low priority / usually routine		Completed
Priority	System	Date Completed (dd/Month)	Service Time (hours)	Tasks For each priority item insert new line (row) for each date/time entry
1	MMCR			Replace switches w/ those from Darwin unit
		13-Oct	3	Switches replaced on Manus MMCR
2	SMET (WND)			Replace upper anemometer
		14-Oct	2	Upper Anemometer replaced, replacement form sent to L.Jones
2	MWR			Check MWR operation - currently not reporting
		12-Oct	5	Investigations found communications failure on MWR digital circuit board
3	DS			Install 2 upgrade RHE OS HDs - ref. BCR 01142
		21-Oct	2	Installed upgrade RHE HDs as per BCR 01142
3	DS			Install new RAID collector w/ 2 RHE OS HDs
		13-Oct	1	Installed collector awaiting further instructions from Ron Reed
		14-Oct	0.1	Collector computer powered on From: Ronald Reed [mailto:rreed@ops.sgp.arm.gov] Sent: Saturday, 14 October 2006 5:45 AM To: Troy Culgan Subject: Re: Manus Collector I have turned the power back on at the APC Switch and told the machine to power up, but I am not getting anything. Power it up as soon as you can.  Ron
		15-Oct	0.5	Ron Reed completed checks and upgrades
3	DS			Upgrade NFS Storage Array HDs
		21-Oct	0.1	Upgrade to be done at a later date (SV-0702M)
4	H2GEN			Repair HOGEN with spare on site (Glowacki)
		14-Oct	2	Commenced investigations into equipment repair/ water management solutions.
		16-Oct	3	Work progressing on water management solution
		17-Oct	4	Work progressing on water management solution
		18-Oct	8	Water treatment plant repaired water pump replaced, Hogen still to be tested

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		19-Oct	2	Check and start HOGEN. Hogen producing gas.
		22-Oct	4	Verify operation, HOGEN operational
5	TSI			Change out mirror
		13-Oct	1	Mirror replaced
5	TSI			Check board for heat sinks
		13-Oct	1	Heat sinks installed
5	TSI			Troubleshoot shadow band
		13-Oct	5	Progressing with investigation into control board communications errors, fault currently appears intermittent.
		24-Oct	2	TSI packed for shipment to Darwin
6	CAL			Record configurations before starting calibration
		12-Oct	0.5	Loggernet configuration recorded
6	LGR			CAL - Verify quantity and serial numbers of spare loggers
		14-Oct	1	One Spare data logger serial number:5968
7	PSP-G (SKY)			CAL - Replace SKYRAD PSP (existing spare to remain on site)
		12-Oct	1	SKYRAD PSP replaced
7	BW-D (SKY)			CAL - Replace SKYRAD B&W
		12-Oct	1	SKYRAD B&W replaced
7	NIP (SKY)			CAL - Replace NIP
		12-Oct	1	NIP replaced
7	PSP (GND)			CAL - Replace GNDRAD PSP
		12-Oct	1	GNDRAD PSP replaced
7	TRH (SMET)			CAL - Compare T/RH sensor
		22-Oct	2	Comparison complete
7	WND (SMET)			CAL - Compare anemometers
		14-Oct	2	Anemometer cal complete - upper wind anemometer changed out due to poor bearing performance
7	ORG (SMET)			CAL - Compare ORG
		22-Oct	1	Checks performed using ORG test set
7	IRT (SKY)			CAL - Compare SKYRAD IRT
		15-Oct	1	SKYRAD IRT check complete
7	IRT (GND)			CAL - Compare GNDRAD IRT
		15-Oct	1	GNDRAD IRT cal check complete
7	CEIL			CAL - Calibrate Ceilometer - Tip and aim at trees
		16-Oct	1	Calibration check complete, calibration Check form sent to L.Jones
7	CAL			CAL - Perform RSU check
		12-Oct	2	RSU check complete, results sent to L.Jones
7	AWS			CAL - Calibration check as per BOM procedure
		17-Oct	1	Stevenson screen repair
8	CAL			Record new configurations and send them to Larry Jones
		12-Oct	1	New loggernet configurations recorded and sent to L.Jones
8	CAL			Fill out calibration/replacement records and send them to Larry Jones
		12-Oct	1	Instrument replacement forms completed and sent to L.Jones
		14-Oct	1	Upper anemometer instrument replacement form sent to L.Jones
8	OTHER			Complete Audit-out form send it to Larry Jones
		24-Oct	1	Completed, form sent to L Jones
9	TBRG			Connect AWS TBRG to SMET data logger

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		15-Oct	1	In Progress
		16-Oct	2	Complete
9	GPS Suominet			Change out Metpack (sent from Darwin 28Jul06)
		15-Oct	3	In Progress
		16-Oct	2	Completed reference: Facility Contact WorkSheet (CS-2006-0970)
9	H2GEN			Electrolyser maintenance (Culgan)
		19-Oct	4	In Progress
		23-Oct	1	Repair water leak balloon launcher
		23-Oct	2	Complete
10	BBSS			Retrieve sonde data from 23Sep through 02 Oct, if possible
		20-Oct	1	Raw Sonde data retrieved from R1, data to be verified and ingested.
10	OTHER			Clean excessed laptop HDs
		16-Oct	3	Completed
11	HVAC			Pressure-wash coils on exterior units
		24-Oct	2	Completed
11	GENSET			Check 12-V batteries with Hydrometer
		21-Oct		Nil Hydrometer on site - to be completed at a later date (SV-0702M)
11	GENSET			Assess fuel tanks for painting
		15-Oct	0.5	Fuel tanks do not require painting
11	ALL SYSTEMS			Perform routine maintenance as outlined in Maintenance Checklist - Send completed checklist to Monty Apple
		19-Oct	3	In Progress
		24-Oct	3	Completed checklist sent to M. Apple
11	ESH			Put laser caution labels on MPL
		21-Oct	0.5	Caution Labels in place
11	ESH			Install new fire extinguisher brackets (1 for D-Van, 1 for I-Van)
		23-Oct	2	I van Bracket installed, John Glowacki to submit survey report of fire extinguisher condition.
11	ESH			Install fire extinguisher tags to indicate when checks are performed
		23-Oct	1	Tags installed
11	ESH			Check Eyewash station
		15-Oct	1	Eyewash solution changed out in eyewash station, U Van eyewash bottle replaced
11	BBSS			Change out Velcro strap sonde retainer
		21-Oct	0.5	completed
11	MMCR			Change out antenna heater filters
		13-Oct	1	Heater filter changed during MMCR switch change
11	MMCR			Change out fan for Radian Receiver, 12 VDC
		13-Oct	1	Fan checked during MMCR switch change
11	MMCR			Change out TWTA desiccant
		13-Oct	1	Desiccant changed during routine maintenance and switch change
11	MPL			Change out shutter timer batteries (AA)
		18-Oct	0.5	Shutter timer batteries replaced
11	MWR			Check Teflon window
		16-Oct	1.5	Teflon window replaced

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11	SMET			Change out T/RH aspirator fan
		18-Oct	1	aspirator fan replaced
11	COMM			Check antenna and connections on Nera phone
		19-Oct	1	Complete, antenna and connection in good condition
11	COMM			Check Iridium phone and charge it if necessary
		14-Oct	1	Communication check complete, Charging complete
11	SKYRAD			Check tracker for alignment
		19-Oct	1	Replace communication lead connector
		20-Oct	1	Adjust time on tracker by 2 min, Adjust sun sensor position, will continue to monitor tracker alignment
		24-Oct	2	After continued monitoring tracker appears to fully aligned
11	DS			Change out BIOS batteries in collector and NFS server, and then reset BIOS
		14-Oct	0	Nil replacement batteries on site - to be completed at a later date (SV-0702M)
11	OTHER			Check operation of Observer computer
		17-Oct	2	Observer computer checked with some observer training in computer skills
11	OTHER			Replace Fluro lamps Balloon shed
		19-Oct	2	Replaced Fluro lamps in balloon shed with observer assistance.
12	OTHER			Retrieve property tags on unused computers and send them back to PNNL (attn: Jane McKinney)
		16-Oct	3	Property tags retrieved and report sent to L.Jones
12	OTHER			Install ARM Education Kiosk - Location TBD
		24-Oct		No instructions received - to be completed at a later date (SV-0702M)
12	OTHER			Remove WD property tag (WD22311) from IBM 380XD laptop and send it to J. McKinney at PNNL - Make sure HD has no information prior to removal of tags
		16-Oct	0.5	Property tag retrieved
12	OTHER			Assist Nauru in Skrad logger problem
		17-Oct	2	Worked with Franklin at Nauru to resolve Skyrad logger problems
		18-Oct	1	Continued work to resolve SKYRAD logger problem, conclusion was faulty IRT causing inconsistencies in logger readings on other channels.

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		20-Oct	1	Facility Contact WorkSheet (CS-2006-0989) ----- Facility Contacted: Nauru Contact Date: 20-Oct-2006 Contact Time: 23:20:00 UTC Contact Sheet Initiator: Culgan, Troy Person or System Contacted: Teimitsi, Franklin System(s) Related to Contact: IRT Contact Subject/Keywords: SKYRAD IRT faulty Contact Details: I had Franklin connect the IRT as per mentors request, the connection of IRT had the immediate affect of increaseing all instrument readings and the internal logger sensors of Battery Vdc and CR23Temp displayed -INF. When IRT disconnected all measurements return to normal. Status: IRT disconnected.
13	SHIPPING			List items to be shipped following visit
	Packed	22-Oct	1	Ship Cal kit to Nauru
	Packed	23-Oct	2	Ship replaced radiometers to SGP
	Packed	24-Oct	1	Ship replaced anemometer to Darwin for repair
	Packed	23-Oct	1	Ship unserviceable DS computer
	Packed	24-Oct	2	Ship TSI to Darwin for repair (plus upgrade to GX620 computer)
14	FUTURE NEEDS			List items needed for future visits (spares, etc.) - to be completed on SV-0702M
				Tool kit update
				spares kit for on site lawn mower (blades, spark plugs, air filter, oil, gasket kit, pullcord, etc)
				Brushcutter plus spares kit and safety equipment for use(site currently kept in trim by hand)
				T/RH aspirator fan
				Lamp Philips TLX XL 40W/33 (order code:261373) qty 6
				Genset Hydrometer
				Timer/stopwatch for balloon launches
				60 Sec timer electrolyser
				Electrolyser Hydrometer
				HOGEN gas sensor calibration gas
				Consider install of Liebert UPS in E-Van for future BBSS install
				Chuck Dewalt Drill DW953
				Blank Media (CD-R, DVD, Floppies)
				240 Volt charger Dewalt (7.2 - 18V)